

ASSIGNMENT 9

Textbook Assignment: "Cranes and Attachments," pages 12-1 through 12-55.

<hr/> <p>Learning Objective: Recognize the types and principles of cranes.</p> <hr/>	
9-1. Cranes are classified as what type of equipment?	9-6. Crane radius is measured from what two points?
1. Material handling	1. Boom butt to the center of the hook
2. Load handling	2. Center of rotation to the boom tip
3. Weight handling	3. Center of rotation to the center of the hook
4. Cargo handling	4. Boom butt to the boom tip
9-2. What types of crane carrier or mounting is used by the NCF?	9-7. Which of the following areas are quadrants of operation for a crawler-mounted crane?
1. Crawler only	1. Over the side
2. Truck and crawler only	2. Over the drive end
3. Wheel and truck only	3. Over the idler end
4. Crawler, truck, and wheel	4. All of the above
9-3. Crawler-mounted cranes are categorized under what USN number registration series?	9-8. Truck-mounted cranes are categorized under what USN number registration series?
1. 37-00000	1. 37-00000
2. 42-00000	2. 42-00000
3. 60-00000	3. 60-00000
4. 82-00000	4. 82-00000
9-4. It is NOT productive to travel a crawler-mounted crane for more than what distance, in miles?	9-9. What is the absolute limit of approach for a crane working in an area of power lines that have a current of 125,000 to 250,000 volts?
1. 1	1. 10 feet
2. 2	2. 15 feet
3. 3	3. 20 feet
4. 4	4. 25 feet
9-5. Crawler-mounted cranes having tracks that extend are rated at what percentage of the minimum weight that can cause the crane to tip?	9-10. A boom should rest in the cradle when traveling with a truck-mounted crane equipped with a lattice boom.
1. 90%	1. True
2. 85%	2. False
3. 80%	
4. 75%	

9-11. Pick and carry crane operations are directed by the crane crew leader.

1. True
2. False

9-12. The capacity of a crane may change when rotating a load from one quadrant to another.

1. True
2. False

9-13. Information concerning a crane capacity in each quadrant of operations can be found at what location?

1. On the equipment status board
2. In the rigging loft
3. On the crane load chart
4. In the dispatch office

Learning Objective: Recognize the components of lattice and telescopic boom cranes.

9-14. A basic boom consists of which of the following components?

1. The boom butt, a 10 foot extension, and a boom tip
2. The boom butt, boom tip, and a jib
3. The boom butt and a boom tip
4. The boom butt, a 20-foot extension, and a boom tip

9-15. Manufacturers have set a zero tolerance for what type of defect(s) or damage to any area of a lattice boom?

1. Rust
2. Bent lacings or cords
3. Cracked welds
4. All of the above

9-16. Which of the following NAVFAC publications contains the set guidelines for cranes having structural damage?

1. P-405
2. P-307
3. P-306
4. P-300

9-17. The rule of thumb used when mixing short boom sections with long sections is to install the longer sections closest to the boom butt.

1. True
2. False

9-18. An operator of a crane should NOT rely on the boom angle indicator for radius accuracy especially when lifts exceed what percentage of the rated capacity?

1. 60%
2. 65%
3. 70%
4. 75%

9-19. Each boom section has two pendants. If one pendant is bad, both pendants must be replaced.

1. True
2. False

9-20. On most cranes, the function of the jib is to increase the lift height.

1. True
2. False

9-21. The bridle assembly is the connection point for which of the following components of a crane?

1. Fairlead
2. Pile driver hammer
3. Pendant lines
4. Master clutch

- 9-22. Boom stops are designed to prevent the boom from going-over backwards in the event what problem occurs?
1. The boom bounces out of the cradle during transport
 2. A load line breaks
 3. The operator leaves the boom hoist lever engaged
 4. The operator swings the crane too fast
- 9-23. What is the function of the master clutch?
1. Provides the mechanism to lift and lower loads
 2. Transmits engine power to the transmission
 3. Engages the power from the power source to the hoist and swing mechanisms
 4. Rotates the house assembly
- 9-24. Which of the following types of crane operations would require the use of two hoist drums?
1. Clamshell
 2. Dragline
 3. Pile driving
 4. All of the above
- 9-25. What component of a crane plays an important part when changing the length of the boom?
1. The bridle assembly
 2. The main hoist line
 3. The counterweight
 4. The master clutch
- 9-26. When lowering the boom to the ground, the boom point sheaves should set on a piece of dunnage.
1. True
 2. False
- 9-27. Before a crane can be put back in service, which of the following instructions states the crane test director must inspect the crane for correct installation of all components?
1. COMSECOND/COMTHIRDNCBINST 11200.1
 2. COMSECOND/COMTHIRDNCBINST 11200.23
 3. COMSECOND/COMTHIRDNCBINST 4400.3
 4. COMSECOND/COMTHIRDNCBINST 1500.20
- 9-28. When telescopic boom sections are extended unequally, uneven stresses are placed on the most retracted section.
1. True
 2. False
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- Learning Objective: Recognize the components of crane attachments.
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- 9-29. The number of part lines rigged on a hook block is NOT a factor when figuring the capacity of a crane.
1. True
 2. False
- 9-30. In order to operate, which of the following attachments requires the use of a tag line, a holding line, and a closing line?
1. Concrete bucket
 2. Clamshell
 3. Dragline
 4. Pile hammer
- 9-31. Which of the following components helps prevent the clamshell from twisting during clamshell operations?
1. Fairlead
 2. Closing line
 3. Tag line winder
 4. Bridle assembly

- 9-32. A fairlead performs what function during crane operations?
1. Keeps the clamshell from twisting
 2. Guides the drag cable onto the hoist drum
 3. Guides the boom hoist cable through the gantry
 4. Supports the pile hammer during pile-driving operations

- 9-33. A drag cable should be lubricated each time operator maintenance is performed on a crane.

1. True
2. False

Learning Objective: Recognize the principles of crane operations.

- 9-34. What factor is the cause of most crane mishaps?

1. Mechanical error
2. Operator error
3. Natural disasters
4. Design flaws

- 9-35. Which of the following COMSECOND/COMTHIRDNCBINST provides guidelines for wire rope slings and rigging hardware used in the NCF?

1. 11200.8
2. 11200.9
3. 11200.11
4. 11200.22

- 9-36. Before receiving a license to operate a crane, operators are required to attend what total number of hours of formal classroom instruction?

1. 8
2. 16
3. 32
4. 40

- 9-37. It is very dangerous for personnel to control crane suspended loads by their hands instead of a tag line.

1. True
2. False

- 9-38. Which of the following personnel has the ultimate responsibility for a crane lift?

1. The signalman
2. The operator
3. The oiler
4. The rigger

- 9-39. Which of the following forms is used when performing crane prestart inspections and is turned in to the crane crew supervisor at the end of each day or shift for reviewing and signing?

1. An ODCL
2. A hard card
3. An Operator's Inspection Guide
4. An Operator's Daily PM report

- 9-40. Wire rope should be replaced when wear has destroyed what fraction of the original diameter of the outside individual wires?

1. 1/8
2. 1/3
3. 1/2
4. 2/3

- 9-41. Which of the following sockets can develop only 70 percent of the breaking strength of the wire rope?

1. Swage socket
2. Cappel socket
3. Spelter socket
4. Wedge socket

- 9-42. "Two-blocking" means hoisting the hook block sheaves against the boom tip sheaves.

1. True
2. False

9-43.	Which of the following personnel is responsible for filling out the crane lift checklist?			<hr/> Learning Objective: Recognize the components and types of pile-driving leads used in the NCF. <hr/>
	1. The rigger 2. The signalman 3. The crane crew supervisor 4. The crane test mechanic	9-48.	A pile-driving hammer is categorized under what USN number registration series?	1. 82-00000 2. 60-00000 3. 42-00000 4. 36-00000
9-44.	The rated capacities of mobile cranes are based on what two factors?			
	1. Width and Length 2. Strength and stability 3. Rigging and winch pull capacity 4. Drawbar pull and mobility	9-49.	The combined weight of all pile-driving attachments reduces the capacity of the crane.	1. True 2. False
9-45.	In situations where crane outriggers cannot be fully extended, you determine the load capacity of a crane by using the "without outriggers" load capacity ratings.	9-50.	Pile-driving leads serve what function during pile-driving operations?	1. As tracks for the pile-driving hammer 2. As a guide for positioning a pile 3. As guides for steadying a pile 4. All of the above
	1. True 2. False	9-51.	During what time period should pile-driving lead bolts be checked for tightness?	1. At the beginning of each day 2. At the beginning of each week 3. At the beginning of each month 4. At the beginning of each shift
9-46.	The boom angles for clamshell operations should normally be between what boom angle degrees?	9-52.	What type of lead is held plumb or at the desired batter with the second single crane line?	1. Swinging 2. Underhung 3. Extended four-way 4. Overhead
	1. 20° to 30° 2. 30° to 40° 3. 40° to 60° 4. 60° to 80°			
9-47.	The boom angle for dragline operations should normally be between what boom angles degrees?			
	1. 25° to 35° 2. 35° to 45° 3. 45° to 55° 4. 55° to 65°			

- 9-53. What type of lead is connected to the boom tip through the use of lead adapters?
1. Swinging
 2. Underhung
 3. Extended four-way
 4. Overhead
- 9-54. During what time period should lead adapter bolts be checked for tightness?
1. At the beginning of each day
 2. At the beginning of each week
 3. At the beginning of each month
 4. At the beginning of each shift
- 9-55. What component is used to hold leads at a vertical for driving bearing piles or to hold the leads at an angle for driving batter piles?
1. A tag line winder
 2. A bridle assembly
 3. A catwalk
 4. A boom mast
- 9-56. What type of lead uses a sliding boom tip connector for connecting the boom tip of the crane to the leads?
1. Swinging
 2. Underhung
 3. Extended four-way
 4. Overhead
- 9-57. What type of lead has an advantage over other leads because it bears the entire bottom of the pile cap to the piling?
1. Swinging
 2. Spud
 3. Extended four-way
 4. Underhung
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- Learning Objective: Recognize the principles and components of pile-driving hammers.
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- 9-58. The noise generated by a pile-driving operation can cause hearing loss.
1. True
 2. False
- 9-59. The DE-10 hammer is lifted and started by a single crane line connected to what hammer component?
1. Fuel pump assembly
 2. Belleville spring assembly
 3. Trip mechanism
 4. Thrust bearing
- 9-60. The compression of the trapped air in the DE-10 hammer creates a preloading force upon which of the following components?
1. Anvil
 2. Drive cap
 3. Pile
 4. All of the above
- 9-61. What component in the DE-10 hammer is designed to break or bend in the event the operator lowers the trip mechanism to low during hammering operations?
1. Dowel pin
 2. Safety link
 3. Throttle shaft
 4. Lifting hook
- 9-62. On a diesel hammer, gasoline is fed by gravity from the main fuel tank through the filter cartridge.
1. True
 2. False
- 9-63. Lubricating oil for a diesel hammer should have a flash point of what degrees, in Fahrenheit?
1. 225°F to 250°F
 2. 325°F to 350°F
 3. 425°F to 450°F
 4. 525°F to 550°F

9-64. What component of a diesel hammer has compression rings and is held in place by buffet bolts?

1. The ram piston
2. The universal drive cap
3. The vibration damper
4. The anvil block

9-65. The length of free travel of the ram-piston from the bottom of the stroke to the safety catch lip at the top is what length, in inches?

1. 69
2. 89
3. 109
4. 118

9-66. The top of the cushion block should be high enough to prevent the hammer shroud from fouling on the rim of the drive cap.

1. True
2. False

9-67. What term is used to describe a pile-driving hammer driving piles without the use of leads?

1. Free hammer
2. Flying hammer
3. Floating hammer
4. Glide hammer

Learning Objective: Recognize principles of pile-driving techniques and terminology.

9-68. What term is used to describe when a pile vibrates too much laterally from the blow of the hammer?

1. Springing
2. Bouncing
3. Refusal
4. Bearing

9-69. What term is used to describe the condition reached when a pile being driven by a hammer has a 1-inch penetration per blow?

1. Springing
2. Bouncing
3. Refusal
4. Bearing

9-70. What term is used to describe a pile supported by skin friction alone?

1. Bearing
2. Batter
3. Lateral
4. Friction

9-71. The longer a pile stays in the soil the more compact the soil becomes; therefore, the greater the resistance to pulling will be.

1. True
2. False

9-72. What term is used to describe a group of piles driven close together in water and tied together so that the group will withstand lateral forces?

1. Batter
2. Anchor
3. Dolphin
4. Fender

9-73. What type of pile is made by pouring concrete into a tapered hole or cylindrical form previously driven into the ground?

1. Precast concrete
2. Cast-in-place concrete
3. Composite
4. Sheet

9-74. Which of the following piles is a commonly used type of sheet pile?

1. Straight web
2. Shallow arch
3. Deep arch
4. All of the above

9-75. Which of the following types of sheet piles are designed for maximum flexibility and tensile strength?

1. Straight web
2. Shallow arch
3. Deep arch
4. Z web